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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,863	06/27/2003	Yosuke Okitsu	11-165	5832
23400	7590	03/10/2006	EXAMINER	
POSZ LAW GROUP, PLC 12040 SOUTH LAKES DRIVE SUITE 101 RESTON, VA 20191			PARRIES, DRUM	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/606,863

Applicant(s)

OKITSU ET AL.

Examiner

Dru M. Parries

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 7-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 3 is objected to because of the following informalities: again, the term “control apparatus” in the first line of claim 3 should read “drive apparatus”. Appropriate correction is required.
2. Claim 5 is objected to because of the following informalities: in the second to last line in the second indent of claim 5, there is a typo. The Examiner believes the word “aid” should be “the”. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the third indent, discussing the “power supply enabling control means”, it doesn’t make sense that it would be controlled by the internal control signal, which is generated by the drive signal output section. This doesn’t make sense because later in the same paragraph it states that the power supply enabling control means is used to enable power to be supplied to the drive signal output section. Before this amendment, the circuit doing the same functions as the power supply enabling control means was controlled by the power supply enabling control signal and not the internal control signal. An explanation of this modification and where this is described in the specification is requested. The Examiner will examine claim 5 as best he can interpret the claim.

***Response to Arguments***

5. Applicant's arguments filed January 3, 2006 have been fully considered but they are not persuasive. In spite of the amendments to the claims, the Examiner believes that the art used to reject the claims in the non-final rejection still reads on the claims. The Examiner disagrees with the applicant's argument that there is no motivation to combine Mayama and Freymuth. The motivation to combine these references is that the control apparatus would be easier to control just by switching the duty cycle of the pulse rather than having to push a button, for example, every time you would want to supply power to a load. One could just set the duty cycle at a certain percentage and let the system run on its own for an indefinite period of time as opposed to standing by the system and activating/deactivating the switch. The Examiner would also like to note that the references are in the same technical field and are accomplishing virtually the same goal. In regards to the argument as to the type of switch used by Mayama, any switch can be pulsed on and off at a predetermined ratio.

In regards to claim 5, the argument is moot, since the modification of the Admission in regards to Mayama eliminates the power being supplied to the waiting status control circuit when the control signal is not being supplied, and the motivation to combine would be so that power is conserved.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayama et al. (6,778,001) and Freymuth (4,636,711). Mayama teaches a control apparatus (+B, SW) that produces a power supply enabling control signal, as a drive control signal, to a signal input point (24) in said drive apparatus (14, 16). He also teaches a drive apparatus that outputs a drive signal (143), in accordance with the drive control signal, which controls driving of a load (L), and that receives the power supply enabling control signal and is adapted to set an internal circuit thereof in a conducting condition to enable electrical power from a drive power source (+B) to the drive apparatus and sets the internal circuit in a non-conducting state when the power supply enabling control signal ceases to be supplied. (Fig. 1) Mayama also teaches the input signal applied at node 24 will be either +B (when SW is ON) or 0V (when off). He teaches a high-side switch (SW) which is coupled to the signal input point (24) and an internal DC power supply (+B) for producing a supply voltage at a predetermined voltage level. Mayama also teaches a first switching element (161) coupled to an integrator circuit (162, 163, 164) for being set in a conducting condition when the integrated voltage is derived and non-conducting when voltage is terminated. Mayama teaches a second switching element (12) being controlled, indirectly, by the first switching element for supplying electrical power from the drive power source (+B) to a part of the drive signal output section (L), and interrupting supplying power while first switch is not conducting. Mayama doesn't teach generating a drive control signal by Pulse Width Modulation. Freymuth teaches driving a switch (114) by initially producing a Pulse Width Modulated signal from the control apparatus (10) (Fig. 1 and 1E). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Pulse Width Modulation into Mayama's control apparatus so that the power supplied to the load is more easily controlled

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on the basis of the control signal formed as a pulse signal by changing the duty cycle of the pulse.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art (Admission), Mayama et al. (6,778,001) and Freymuth (4,636,711). Admission teaches a low-side switching element (10) coupled to the input of a drive apparatus (2). Admission teaches a drive signal output section (3, 4), which outputs a drive signal to the load, and adapted to operate on an input signal (a drive control signal) to the control signal-processing unit (4), which varied between ground potential, and a first predetermined voltage level ( $V_{IN}$ ). It also teaches waiting status detection means (4) for generating an internal control signal (input to 3). It is inherent that the voltage from the drive power source (vehicle battery) is greater than the voltage ( $V_{in}$ ) from the power supply enabling control signal, since  $V_{in}$  is less than 5V (based on internal power supply and resistor 6, and known vehicle batteries are at least 12V). Admission fails to teach the method of connecting and disconnecting said signal input point to and from ground, nor does it teach the enabling and interrupting of a DC power source to the drive signal output section. Admission also fails to teach signal level lowering means for setting a maximum level of the input signal. Mayama teaches a power supply enabling control section (16) controlled by the control signal (at 24) for enabling or interrupting a DC supply at a second level to part of the drive signal output section (14 via switch 161) depending on whether the drive control signal is terminated or not. Mayama also teaches a signal level lowering means (164) for setting a maximum level of the input signal (Col. 9, lines 8-23). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate an enabling/disabling means and a voltage limiter in the drive apparatus so that power won't be supplied at all times and

therefore save power. Freymuth teaches driving a switch (114) by initially producing a Pulse Width Modulated signal from the control apparatus (10) (Fig. 1 and 1E). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a pulse width modulated signal into the Prior Art's input signal (i.e. connecting and disconnecting the switch, 10) so that the power supplied to the load is more easily controlled on the basis of the control signal formed as a pulse signal by changing the duty cycle of the pulse.

***Allowable Subject Matter***

9. Claims 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 7 would be allowable because the prior art fails to teach the drive apparatus comprising a third switching element, and a third switching element with a zener diode connected in that specific configuration, and since claims 8 and 9 are dependant on claim 7, they would be allowable also.

***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dru M. Parries whose telephone number is (571) 272-8542. The examiner can normally be reached on M-Th from 8:00am to 5:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus, can be reached on 571-272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMP

3-5-2006



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